

Confidential ☐ Yes ☐ No

Port/Terminal

POLA/Terminal X

CALIFORNIA AIR RESOURCES BOARD AT-BERTH OCEAN-GOING VESSELS REGULATION TERMINAL PLAN

FORM 1 GENERAL INFORMATION

Table 1

General Information			
Port	POLA/POLB	Date	1/21/09
Terminal Name	Terminal X		
Total Number of Berths	Two Berths		
Address	17 Port Way		
City	Fiction	State	California
Zip			
Terminal Operator	Seaside Operations		
Contact Person	Grant Chin	Title	
Phone	916-327-5602	FAX	
Email	gchin@arb.ca.gov		

Check the box next to the Forms submitted in this package

Check

Grid-Based Shore Power Option Only – Reduced Onboard Power Option – FORM 2	X
Grid-Based Shore Power – Either Compliance Option Terminal/Utility Power Requirements – FORM 3	X
Grid-Based Shore Power Option – Equivalent Emissions Reduction Option – FORM 4	
Distributed Generation Option – Equivalent Emissions Reduction Option – FORM 5	
Shore-Side Alternative Control Option – Equivalent Emissions Reduction Option – FORM 6	
Vessel-Side Alternative Control Option – Equivalent Emissions Reduction Option – FORM 7	
Schedule for Implementation – FORM 8	X

FORM 2**GRID-BASED SHORE POWER – REDUCED ONBOARD POWER OPTION****Table 2A**

2014 Estimate the categories of Vessels and Operators that are anticipated to visit this Terminal, how often they may visit, those that will use shore power, the number of visits that will use shore power, the typical berthing times and annual power use							
Vessel Operator	Vessel Category	Number of Vessels	Number of Vessel Visits	Number of Vessels that Will Use Shore Power	Number of Vessel Visits That Will Use Shore Power	Average Berthing Time, Hr	Total Estimated Annual Power Use, MW-Hr
Fast Shipping	Container	28	184	9	102	62	16,000
North Trails	Container	20	66	6	36	30	2,200
Best	Container	8	50	2	20	55	2,600
Golden Gate	Container	8	17	1	4	25	250
Giant	Container	1	1	0	0	NA	NA
Total		65	318	18	162		21,050

Table 2B

2017 Estimate the categories of Vessels and Operators that are anticipated to visit this Terminal, how often they may visit, those that will use shore power, the number of visits that will use shore power, the typical berthing times and annual power use							
Vessel Operator	Vessel Category	Number of Vessels	Number of Vessel Visits	Number of Vessels that Will Use Shore Power	Number of Vessel Visits That Will Use Shore Power	Average Berthing Time, Hr	Total Estimated Annual Power Use, MW-Hr
Fast Shipping	Container	33	212	16	161	62	26,000
North Trails	Container	22	75	11	53	30	3,500
Best	Container	10	57	4	34	54	4,100
Golden Gate	Container	8	19	2	7	25	400
Giant	Container	2	2	0	0	NA	NA
Total		75	365	33	255		34,000

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FORM 2

GRID-BASED SHORE POWER – REDUCED ONBOARD POWER OPTION

Table 2C

2020 Estimate the categories of Vessels and Operators that are anticipated to visit this Terminal, how often they may visit, those that will use shore power, the number of visits that will use shore power, the typical berthing times and annual power use							
Vessel Operator	Vessel Category	Number of Vessels	Number of Vessel Visits	Number of Vessels that Will Use Shore Power	Number of Vessel Visits That Will Use Shore Power	Average Berthing Time, Hr	Total Estimated Annual Power Use, MW-Hr
Fast Shipping	Container	35	232	21	193	66	38,000
North Trails	Container	25	82	15	65	30	4,500
Best	Container	10	57	6	46	54	5,200
Golden Gate	Container	9	20	4	13	25	800
Giant	Container	2	2	0	0	NA	NA
Total		81	393	46	317		48,500

NOTE: Please complete FORM 3 if installing the infrastructure for Grid-Based Shore Power following the Reduced Onboard Power Option and/or the Equivalent Emissions Reduction Option.

**FORM 3
GRID-BASED SHORE POWER**

Table 3A

Terminal Information - Grid-Based Shore Power			
		Yes	No
Is the power available now to the Terminal adequate to service the compliance requirements? *Please enter NA for Not Applicable if grid-based shore will not be used by 2010 or 2012.	2010*	NA	
	2012*	NA	
	2014	X	
	2017	X	
	2020		X
Describe the current terminal electrical system and include a "simplified schematic"—see instructions and Appendix C for an example. If necessary, attach additional sheets and indicate reference to Table 3A.			
Chart 1 describes the terminal's current electrical system. Terminal X currently has 50 MW available at the facility. Peak power required by the facility varies between 25 to 35 MW and the facility's annual usage for the last calendar year (2007) was 85,000 MW-hr. A medium voltage line comes in at the terminal substation and all the lines within the terminal are low voltage.			

FORM 3 GRID-BASED SHORE POWER

Table 3B

Terminal Information - Grid-Based Shore Power					
Please enter NA for Not Applicable if grid-based shore will not be used by 2010 or 2012.	2010	2012*	2014	2017	2020
How many berths are anticipated to need modifications to meet the regulation requirements?	NA	NA	2	0	0
How many new berths are expected to be constructed and have shore power capability?	NA	NA	0	0	1
Estimate the maximum electrical capacity (MW) for each berth	NA	NA	7.5 mva	7.5 mva	7.5 mva
Estimate the maximum electrical capacity (MW) for the Terminal	NA	NA	50	50	70
Identify the improvements necessary to provide power to the berth(s) (i.e. schematics, additional conduit, additional vaults, electrical safety equipment, etc.). If necessary, attach additional sheets and indicate reference to Table 3B.					
2010*					
Not Applicable					
2012*					
Not Applicable					
2014					
Chart 2 provides a schematic for the revisions to the terminal to satisfy the regulation's 2014 requirements. The changes are shown in a dash-line format. The facility has adequate power to provide power for shore power for two berths. The changes to the terminal's electrical system to satisfy the 2014 requirement include adding a new terminal substation for shore power and running low voltage power lines to berths 1 & 2, and for each berth, adding four vaults and associated switchgear. The potential peak power demand in 2014, including shore power, is expected to increase to between 35 and 45 MW.					
2017					
No additional modifications are needed to satisfy the 2017 requirements.					
2020					
By 2020, as shown in Chart 3, an additional berth will be added to the terminal to handle the increased ship traffic. As part of this expansion, additional power will be brought in to provide the additional power needs of the new berth and associated equipment, including shore power—see discussion in Table 3D. The terminal will then have 70 MW available. The electrical infrastructure (cabling, vaults, and switchgear) for shore power will be added to the berth as part of the development of the new berth. The shore power substation will be modified to accept the additional power. The potential peak power, including shore power, increases to between 50 to 60 MW.					

FORM 3 GRID-BASED SHORE POWER

Table 3C

Utility/Port Information - Grid-Based Shore Power			
		Yes	No
Is the power available now to the Port adequate to service the compliance requirements? *Please enter NA for Not Applicable if grid-based shore will not be used by 2010 or 2012.	2010*	NA	
	2012*	NA	
	2014	X	
	2017		X
	2020		X
Please describe the adequacy of the <u>current</u> power availability with respect to vessel power needs to the Port and Terminal(s) and include a "simplified schematic"—see instructions. Attach any additional sheets and indicate reference to Table 3C.			
The utility B street substation provides the power to the port, as shown in Chart 6. The B street substation serves two port substations—the North Substation and the South Substation, which serves Terminal X and two other terminals. As shown in Chart 4, the three terminals are currently served with a single medium voltage line. The current system will provide the necessary power for Terminal X to satisfy the 2014 and 2017 regulatory requirements.			
Beginning in 2017, the port's electrical system cannot provide enough power for all terminals at the port to support the expected shore power needs for all affected terminals. However, the port's electrical system serving Terminal X does provide adequate power to support Terminal X's shore power needs from 2010 thru 2017.			

FORM 3 GRID-BASED SHORE POWER

Table 3D

Utility/Port Information - Grid-Based Shore Power
<p>Based on your discussions with the Utility Provider and the port, identify the necessary infrastructure improvements to satisfy the 2010, 2012, 2014, 2017, and 2020 requirements as needed. Identify any specific improvements such as new power lines, additional transformers, substations, etc. Will modifications be made to an existing unit or will a new substation be required? Indicate when these improvements would be necessary with regard to satisfying the 2010, 2012, 2014, 2017, and 2020 requirements. Attach any additional sheets and indicate reference to Table 3D. *Please enter NA for Not Applicable if grid-based shore will not be used by 2010 or 2012.</p>
2010*
Not Applicable
2012*
Not Applicable
2014
No modifications necessary
2017
No modifications necessary
2020
<p>To satisfy the increased power needs for 2020 resulting from shore power and increased shipping activities, the utility will bring in an additional high voltage line to the existing Utility Substation. The utility anticipates modifications on the B street Substation will begin in the 1st quarter 2014 and all work will be completed by the 4th quarter 2014. See Chart 7 for changes to utility infrastructure for power entering port. The port will bring a portion of this power to Terminals X, Y, and Z by adding an additional medium voltage line to the existing South Substation from the Utility Substation and adding an additional medium voltage line from the South Substation to Terminals X, Y, and Z—see chart 5. The port plans to make the revisions to the South Substation and add the additional medium voltage lines beginning 1st quarter 2015 and finishing 4th quarter 2016. This schedule is dependent upon completion of CEQA documentation and related construction.</p>

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FORM 8

SCHEDULE FOR IMPLEMENTATION

The purpose of a Gantt chart (or similar planning software) is to provide details on when specific activities are planned to be implemented. Attach a Gantt chart for the planned schedule for all control technologies used. Please separate the utility provider, port, and terminal activities for each compliance option. Identify the critical elements in the schedule that may delay the implementation of the compliance solution. Include proposed contingency plans that can be implemented in the event that a delay in the schedule occurs.